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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/542,118	04/18/2006	Gerhard Eser	2002P18528WOUS	8713
28524 7590 08/23/2007 SIEMENS CORPORATION INTELLECTUAL PROPERTY DEPARTMENT 170 WOOD AVENUE SOUTH ISELIN, NJ 08830			EXAMINER MOULIS, THOMAS N	
			ART UNIT 3747	PAPER NUMBER
			MAIL DATE 08/23/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/542,118

Applicant(s)

ESER ET AL.

Examiner

Thomas N. Moulis

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/12/05;9/19/05
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15-16 and 20, 23-24, 28 are rejected under 35 U.S.C. 102(b) as being anticipated by Betki et al US 5237975. The reference discloses the claimed elements of a fuel injection system, comprising: a fuel reservoir 16, a first pump 10 connected to the fuel reservoir for feeding a fuel to the fuel reservoir; a plurality of injectors 18 connected to the fuel reservoir for discharging the fuel from the fuel reservoir; and a control and regulation device 20, 22 connected to the first pump for controlling the first pump, the control and regulation device configured to adjust a feed pressure of the first pump based on a fuel temperature and a vaporization characteristic of the fuel. The system uses fuel temperature and a fuel vaporization characteristic in Figure 4, boxes 78 and 80 as parameter in controlling the fuel pump. The relationship between fuel temperature, fuel pressure and the tendency for fuel to vaporize is well known—a temperature signal is indicative of fuel vaporization characteristics.

3. Claims 15-16 and 20, 23-24, 28 are rejected under 35 U.S.C. 102(b) as being anticipated by DE 10059570. The reference discloses the claimed elements of a fuel

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injection system, comprising: a fuel reservoir 3A, a first pump 2 connected to the fuel reservoir for feeding a fuel to the fuel reservoir; a plurality of injectors 4 connected to the fuel reservoir for discharging the fuel from the fuel reservoir; and a control and regulation device 8, 13 connected to the first pump for controlling the first pump, the control and regulation device configured to adjust a feed pressure of the first pump based on a fuel temperature and inherently a vaporization characteristic of the fuel. See Figure 1. Note element 12 Tw is the temperature input to the controller.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 17-19, 21-22, 25-27 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Betki et al. The reference of Betki et al. applies as discussed above. Determining the vaporization characteristic using a Lambda probe signal is not specifically disclosed by Betki et al. However it would have been obvious to one of ordinary skill in the art to utilize an existing signal available to the computer such as the Lambda probe signal, since the relationship between fuel temperature, fuel pressure and the tendency for fuel to vaporize is well known—using a signal indicative of engine

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temperature to determine fuel vaporization characteristics is within the level of skill in the art.

6. Additionally, an algorithm; or determining the fuel temperature using a mathematical temperature model are not specifically disclosed by Betki et al. However, using stored equations, models or algorithms to estimate and determine fuel temperature and/or fuel vaporization characteristics are obvious to one of ordinary skill since the relationship between fuel temperature and fuel pressure and the tendency for fuel to vaporize is well known—i.e. determining a fuel vaporization characteristic is within the level of skill with an existing signal indicative of fuel temperature.

Furthermore, it would have been obvious to one of ordinary skill in the art at the time of the invention to maintain a certain minimum pressure within the system to avoid cavitation and resulting noise and fuel vaporization within the system.

Betki et al shows a single fuel pump system. Fuel systems having a second fuel pump are well known. It would have been obvious to one of ordinary skill in the art to include a second fuel pump within the system since it is conventional to use a feed pump within the tank and a second injection pump.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See the fuel supply systems shown in the cited art having fuel pressure control through control of a fuel pump in accordance with temperature. Fuel temperature and fuel pressure are known to affect fuel vaporization and typical motor

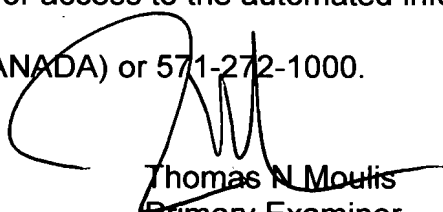
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vehicle fuel systems have sensors and ECU responses to minimize fuel vapor generation. Note Tuckey et al 5044344 shows controlling fuel pressure in accordance with pressure and alcohol concentration.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas N. Moulis whose telephone number is 571 272 4852. The examiner can normally be reached on M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen K. Cronin can be reached on 571 272-4536. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Thomas N. Moulis
Primary Examiner
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